NavMed 369

UNITED STATES NAVY

MEDICAL NEWS LETTER

Editor - Captain L. B. Marshall, MC, USN (RET)

Vol. 27 Friday May 4, 1956 No. 9

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Policy

The U.S Navy Medical News Letter, is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor are they susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Notice

Due to the critical shortage of medical officers, the Chief, Bureau of Medicine and Surgery, has recommended, and the Chief of Naval Personnel has concurred, that Reserve Medical Officers now on active duty who desire to submit requests for extension of active duty at their present stations for a period of three months or more will be given favorable consideration. BuPers Instruction 1926.1B applies.

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Voluntary Retirement

The policy of the Bureau of Medicine and Surgery is to recommend approval on requests for voluntary retirement of medical officers who have 20 or more years' active service creditable for retirement. However, because of personnel shortages, the Bureau may of necessity have to recommend modification of the requested effective date because it may not always be possible to furnish a qualified relief by the time specified in the request. (PersDiv, BuMed)

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U.S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

Blood Loss and Operative Time in Surgical Procedures

The deliberate reduction of arterial blood pressure during major operative procedures has been alleged to provide an essentially bloodless surgical field, thereby minimizing blood loss and decreasing operative time. This report compares results obtained in 90 patients during general surgical procedures, and in whom the blood pressure had been deliberately lowered with 84 patients with similar operations without hypotension. All patients were hospitalized during the same period of time and were matched so far as type of operation and skill of the surgeon were concerned.

The types of operations for which deliberate hypotension was provided included radical dissections of the neck, 29; radical dissections within the pelvis, 17; radical mastectomies or mastoplasties, 7; radical dissection of the groin, 6; and other operations of similar magnitude such as Whipple's resections for carcinoma of the pancreas, excision of cranial tumors, shoulder disarticulation, abdominal perineal resection, et cetera.

The techniques for producing hypotension are listed in a table.

It is apparent from the data presented that hypotensive anesthetic techniques reduce the amount of blood lost during major operative dissections. It is difficult to determine whether such reduction is of sufficient degree to justify the hazard involved. In both of the series of radical dissections analyzed, the reduction was approximately 35%. This represented one unit (550 ml.) of blood saved in the dissections of the neck and two units in the dissections within the pelvis. However, it remained necessary to transfuse two units in the first instance and four units in the second.

One of the hazards of any radical dissection is the need for multiple transfusion with the possibility of the development of bleeding tendencies. In patients with operations similar to those discussed, and operated upon without deliberate hypotension, three deaths occurred from exsanguination due to uncontrollable oozing following multiple transfusion. Is a reduction in needed transfusion of blood from six units to four units a significant safety factor in this regard? The authors are unable to answer this question definitely, but doubt that an affirmative answer is justified.

Deliberate hypotension does not guarantee a reduction in blood loss. Some surgeons have commented that occasionally patients demonstrate more oozing at the lower blood pressure than at the higher pressure. However, in general, less scatter is noted in the hypotension groups as compared with the control groups.

It is difficult to compare blood loss in different groups of patients for several reasons. First, the patients compared must be hospitalized within the same period of time. If a comparison were drawn between the deliberate hypotensive group reported herein and the group operated upon with standard anesthetic techniques reported by Royster et al., several years ago, hypotension would appear very desirable. However, when the patients of 1951

are compared with the control group of this report, it becomes obvious that the same group of surgeons have reduced their operative time significantly as well as the blood lost at operation. A second source of confusion, when comparisons are drawn for this type of surgery, are such variables as the extent of operation, condition of the patient's tissue, and degree of arteriosclerosis. To rule out these variables, a much larger series of patients than reported in this presentation would be needed.

It is of interest that the operative time was not reduced by the use of hypotension. This would suggest that blood loss did not normally hamper surgical dissection of this type.

Deliberate hypotension is not employed without considerable risk to the patient. The production of deliberate hypotension is a formidable procedure. It should be undertaken only by those trained in the use of the technique and those fully cognizant of the physiology of hypotension, the pharmacology of the drugs used to produce hypotension, the adjuncts assisting to induce hypotension, and the limits of the method. Neither spinal anesthesia nor the ganglionic blocking agents are consistently effective in producing hypotension.

The ganglionic blocking agents appear to reduce the need for general anesthetics, and also reduce pulmonary ventilation by a "curare-like" action. Failure to lighten the plane of anesthesia or to provide adequate tidal exchange during hypotension may lead to disaster. Lack of knowledge of the duration of effects of ganglionic blocking agents may increase morbidity and mortality.

The authors currently utilize deliberate hypotension with less enthusiasm than 18 months ago. Although the surgeons initiate the request for hypotension, they note little resistance when they are reluctant to deliberately lower the blood pressure. Candidates for the techniques are carefully selected, and must be free of all complicating cerebral, renal, hepatic, or cardiovascular disease. Despite the data presented, a few surgeons believe that controlled hypotension facilitates dissection. While these data neither favor deliberate hypotension nor disprove the value of the technique, they do call for objectivity in determining the ultimate role of the method in surgery.

Data and conclusions obtained from the use of deliberate hypotension in 90 patients have been presented and compared with those noted in control groups.

Blood loss was found to average 910 ml. in 29 patients who had radical dissections of the neck utilizing deliberate hypotension, and 1415 ml. in 20 control patients. The average operative time was 4 hours and 45 minutes with controlled hypotension, and 3 hours and 50 minutes without hypotension.

In 17 patients, who had radical dissection within the pelvis with induced hypotension, the blood loss averaged 1870 ml., and in 11 control patients, the average loss was 2805 ml. The average operative time was 5 hours with deliberate hypotension, and 4 hours and 35 minutes in the controls. (Ditzler, J. W., Eckenhoff, J. E., A Comparison of Blood Loss and Operative Time

in Certain Surgical Procedures Completed With and Without Controlled Hypotension: Ann. Surg., 143: 289-293, March 1956)

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Recurrent Anterior Dislocation of the Shoulder

Although recurrent dislocation of the shoulder is one of the oldest recognized orthopedic entities and has been the subject of voluminous writings, indicating continual interest, practically every phase of the lesion remains controversial today. It might be said that there is agreement on only two aspects of the lesion, namely, the clinical manifestations and the clear-cut indication for operative treatment.

A patient usually considers an injury to be the cause of the recurrent dislocation. The typical history is that of a young adult, usually a healthy and muscular man, who sustained a traumatic dislocation of the shoulder while participating in some sport. The dislocation was reduced and the shoulder functioned normally for a few months when a second dislocation occurred, in some cases under circumstances similar to those of the initial episode, but usually in consequence of some insignificant trauma. Thereafter, recurrence took place with varying frequency. In long-standing cases, slipping may have occurred while the patient turned in sleep, or the shoulder may have repeatedly dislocated on any ordinary movement that involved abduction and external rotation of the arm, such as putting on a coat or combing the hair. The writer has observed that, in his experience, whenever two recurrences have been sustained, there are subsequent episodes.

Little actual discomfort is experienced when the shoulder dislocates, and the patient himself may be able to force the humeral head back into place. Nevertheless, the lesion represents real disability. Rest may be disturbed. The patient may hesitate to carry out some of the common functions of daily living. Even when the humeral head tends to subluxate, rather than to dislocate completely, the patient is harassed and obsessed by the fear of total displacement. A young athlete is particularly handicapped by the lesion, and a man earning a livelihood suffers a considerable loss of working capacity.

By the time the patient is first seen there is little on which the surgeon can base the diagnosis except the history of acute traumatic dislocation followed by recurrences. Examination of the shoulder produces little in the way of objective signs. Routine roentgenographic examination sometimes demonstrates a groove in the humeral head provided that it is well defined. Special projections must be made to visualize smaller defects as well as pathologic changes in the anterior glenoid margin.

Innumerable operations have been described for the repair of recurrent dislocation and new procedures and modifications of older methods continue to

to be proposed. However, reports appearing within the past 7 years, indicate that operative treatment is being confined for the most part to relatively few procedures.

Five different operative methods are in popular use. French surgeons have continued to favor the coracoid buttress operation, introduced by Oudard, which aims at creating a bone block to prevent exit of the humeral head and shortening of the subscapularis tendon.

In Germany, and particularly in the Scandinavian countries, surgeons remain faithful to the Eden-Hybbinette bone block type of operation. This procedure consists of reconstructing the damaged glenoid margin by implanting a bone graft into its anteroinferior surface at the site of dislocation. Criticism of this method has been the difficulties of technique, the danger of absorption or non union of the bone graft and postoperative restriction of motion as well as pain.

More statistical data have been reported on end results of this procedure than of any other method. A series of 773 cases treated with the Eden-Hybbinette method or by a modification has been compiled from literature appearing in the 10-year period from 1944 to 1954. Dislocation recurred in 55 cases (7%).

In Anglo-Saxon countries, the operations of Magnuson and Stack, Putti and Platt, and Bankart, or modifications of these procedures are considered the most effective methods. Each of the procedures has been supported by successful end result studies. All three operations have as the common objective, control of the external rotational movement of the shoulder. This is accomplished in the Magnuson technique by transferring the insertion of the subscapularis muscle from the lesser to the greater tuberosity, shortening both the muscle and the anterior capsule. The Putti-Platt technique combines imbrication of the anterior portion of the capsule with shortening of the subscapularis muscle. A postoperative limitation of the external rotational movement has not infrequently been mentioned as a disadvantage of both of these methods.

The Bankart operation, based on the recognition of the detachment of the glenoid labrum and anterior capsule as the underlying pathologic lesion, is directed to the reattachment of the fibrocapsular segment to the glenoid rim. Both the Magnuson-Stack and Putti-Platt operations are considered to be somewhat easier than the Bankart method in that the technique is less complicated and inspection of the joint is not required. However, the Bankart method has stood out prominently from all other procedures in recent years and has been widely used.

A description is given of the Bankart technique in which the step of suturing the glenoid labrum in place, long recognized as a difficult process, is simplified by the use of metal staples.

Personal experience in treating recurrent dislocation over a period of many years is recounted. A report is given on 13 cases in which the Bankart

operation, simplified by using staples for fixation purposes, was used. Twelve of the thirteen patients obtained excellent results; no recurrence has been experienced and the shoulders have good function. (MacAusland, W.R., Recurrent Anterior Dislocation of the Shoulder: Am. J. Surg., 91:323-330, March 1956)

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Fracture of the Odontoid Process

Fracture of the odontoid process has in the past been considered an uncommon lesion with a discouragingly high fatality rate.

Many odontoid fractures, as well as other injuries of the upper cervical spine, remain overlooked. In conventional roentgenograms of the neck, teeth, mastoid processes, and base of the skull sometimes obscure details of the atlas and axis. Initial films may be poor owing to the inability of the patient to cooperate because of confusion or pain due to cerebral or other injuries. Many such patients, admitted in stupor, do not complain of neck pain and are hospitalized for treatment of other serious traumatic disorders, with cervical fracture either unsuspected or relegated to a position of secondary importance.

The commonest complaint was painful stiff neck following a head injury. Hospitalization was almost always necessary because of this or associated trauma. Severe pain in the neck or suboccipital region was generally felt immediately after the accident, although on a few occasions the onset was delayed, sometimes as much as 24 hours. Some did not complain because of stupor or other post traumatic disorders.

Examination revealed marked nuchal rigidity, and most patients objected strenuously to any motion of the head. Soft-tissue swelling in the lateral or posterior neck was occasionally found, but was not always localized to the upper neck. The site of maximum tenderness also varied in location.

Although the possibility of odontoid fracture was often considered after the initial examination, the diagnosis was not established in any case until x-rays were obtained. It was often necessary to repeat films before demonstrating a fracture, and planigrams were made if conventional roentgenograms were inconclusive.

Emergency treatment of odontoid fracture and other atlantoaxial lesions requires fixation of the head and neck in neutral position and prompt hospitalization. Dislocation must then be reduced by traction and the fracture site immobilized to permit healing and prevent additional spinal cord damage. Respiratory embarrassment may necessitate tracheotomy, care in a respirator, or both. Infection at the fracture site should be combated by antibiotics.

In the presence of more than slight dislocation, traction in tongs is generally indicated, but for a child or a patient with a laceration of the scalp a head halter may be desirable. Five to seven pounds of pull in tongs are

usually enough to reduce dislocation and, thereafter, should be maintained at least 2 weeks before the patient is placed in a collar. More than 4 pounds of pull in a halter is usually not tolerated for more than a few days because of resultant soreness in soft tissues over the chin or reaction in the temporomandibular joint. Four to six weeks of bed rest in all cases, including those without dislocation, is desirable. The authors are in general accord with the recommendations of Grogono that in the case of older persons, especially where disability is minor, a plaster collar alone may be sufficient, but skeletal traction should be instituted in the presence of severe displacement. Watson-Jones also believed results of treatment with a cast might be excellent and advised operative fusion only if the closed treatment was unsuccessful.

A few authors have given specific advice as to the duration of immobilization. Hambly believed that bony union, following fracture of the odontoid, might occur in 3 months and advised that a collar be worn for an additional month. Osgood and Lund recommended immobilization in plaster for 3 months and a Thomas collar for 3 more months.

It is generally agreed that operative fusion is at times indicated. It would seem best to reserve such surgery for those cases with instability at the fracture site following a trial of traction and immobilization . The authors advise treatment in a collar for as long as 9 months after the fragments are approximated before deciding that the fracture will not heal. If redislocation takes place, or serious neurological dysfunction appears during this time, orthopedic consultation is indicated and surgery should be considered. Treatment must, however, be individualized according to the severity of the injury and the complications encountered, e.g., marked instability at the atlantoaxial joint, observed during the first few weeks, may make immobilization by traction and plaster jacket alone unusually hazardous. (Amyes, E. W., Anderson, F. M., Fracture of the Odontoid Process: Arch. Surg., 72: 377-387, March 1956)

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Polyethylene Glycol Ointment in Burn Treatment

The care of the burn wound plays a prominent part in the therapy for the burned patient. The ideal therapy has not yet been achieved. The immediate goal of such therapy is to effect complete autologous epithelization of the wound as rapidly as possible, and while so doing, to protect the patient from invasive infection. Part of the difficulty lies in the hope to find a substitute for the skin which has been lost without knowing all the functions that this substitute should perform. Some of the known criteria for such a substitute follow:

1. It must minimize infection.
2. It must be nonirritating locally and nontoxic systemically.

3. It must not interfere with epithelization
4. It must avoid maceration.
5. It must be economical.
6. It should avoid multiple dressing changes with their attendant trauma and risk of anesthesia.
7. It should act as a debriding agent.
8. Sterile precautions should be unnecessary.
9. It should be useful under varying climatic conditions.
10. Refrigeration of the agent should be unnecessary; this would facilitate stockpiling.
11. It should be easily applied.
12. It should keep the eschar soft, thus allowing motion without cracking.
13. It should minimize pain.
14. It should be easily adaptable to mass casualties in the event of military or civilian disaster.
15. It should allow easy transportation of the patients without hiding the wound.

These criteria make it clear why many agents have been tried in the past and have been found unsatisfactory.

Nontoxic water-soluble ointments are relatively new in the treatment of burns. Water miscible ointments, together with a wetting agent and pyruvic acid, have been advocated by Harvey. Polyethylene glycol, related compounds, and K-Y jelly have been used rather successfully with pyruvic acid or with antibacterial agents. The authors believe that some of the water-soluble ointments can, with the addition of secondary agents such as antibiotics and debriding agents, fulfill many of these criteria for an ideal burn ointment.

Throughout the past two years, the authors have treated a series of patients by the application of an ointment to exposed burns. This ointment consists of a water-soluble base to which has been added antibiotics, fungicides, and a debriding agent. Polyethylene glycol compounds constitute the main vehicle.

The ointment is applied generously to the wound after the systemic needs of the newly admitted patient have been satisfied. It is applied either with the gloved hand or by a commercially available dough extruder. The latter cooking utensil is very satisfacotry, especially in children, because it extrudes a ribbon of ointment which is thus applied atraumatically. The ointment should be reapplied as often as is necessary to keep the eschars soft. This may require application at 4- to 6-hour intervals, depending upon the temperature of the environment. The melting point of the ointment may be raised or lowered by increasing or decreasing the concentration of the polyethylene glycol (molecular weight 4000).

The ointment may be kept (covered) at the bedside without refrigeration. Because it contains no water, the antibiotics do not deteriorate.

The purpose in reporting these data is to encourage the use by others of a water soluble ointment in the treatment of burns by exposure. These data are submitted for analysis to lend support to such encouragement. It is fully realized that a given mode of burn therapy is difficult to evaluate in view of the large number of variables present in the care of a given series. However, the net result of the present series has, for the given reasons, been so satisfactory it is considered worthy of report. A more critical evaluation of this ointment could be obtained in the future by using control areas such as a leg or an arm with burns similar in extent and severity in the same patient for comparison. The control areas might be treated by petroleum jelly pressure dressing or by exposure therapy without ointment. Comparison with burns treated by exposure would be of particular value because, as described by Artz and associates, such therapy fulfills many of the given criteria. In the present series, it was elected to first evaluate the general systemic response and the over all results of this mode of therapy. This preliminary report describes that effort. It is believed, however, that the next step in evaluation should consist of a critical comparison with control regions in the same patient.

If the results of this type of therapy are evaluated on the basis of the criteria listed for an ideal ointment, it is apparent that the value of the ointment as a debriding agent and as an analgesic is impossible to determine because there are no controls. The value under varying climatic conditions has not been determined. Whether this ointment would allow easy transportation of the patients without hiding the wound is difficult to state. Certainly, the relatively benign course, in spite of the lack of sterile precautions, suggests that burns so protected by ointment might withstand the contamination of ordinary transportation. Aside from these criticisms, however, it appears that most of the demands of the criteria are satisfied under the conditions observed in this series.

An evaluation of experience with a water-soluble ointment in 24 patients with burns treated by exposure has been presented. The experience has been gratifying and, in the opinion of the authors, warrants further use. (MacGregor, C.A., Pfister, R.R., The Use of Polyethylene Glycol Ointment in Burns Treated by Exposure: Surgery, 39:557-563, April 1956)

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Enzymes and Wetting Agents in Treatment of Pulmonary Atelectasis

In April 1953, because of the serious problem of atelectasis in poliomyelitic patients, a study on atelectasis was begun at the Rancho Amigos Respiratory Center for Poliomyelitis. One hundred and twenty-five cases of atelectasis with only one failure are reported in this study.

The problem of atelectasis is not a new one and for many years has been a significant complication in postoperative abdominal general surgical cases. Recently, it has been noted that, in postpoliomyelitic patients, atelectasis is the most serious complication and the main cause of pulmonary disease which leads to death.

Four factors are prominent in the development of atelectasis: (1) diminished respiratory function; (2) absent or ineffective cough; (3) abnormal bronchial secretions, both in quantity and in quality, and (4) respiratory infection. Although the etiology of the four factors is far different in poliomyelitic cases than others, the common denominator in all atelectasis is the retention of viscid tenacious secretions which cause obstruction of the airway to a whole lung, a lobe, or a segment. Removal of these secretions, then, is the solution to the problem. This has not been easy to accomplish because of the extreme viscidity of the secretions in most instances, thereby rendering it impossible for the patient to expel the obstructing material. Once the secretions are thinned or liquefied, expulsion can be accomplished with facility.

It became obvious that some agent was necessary to thin out and loosen these tenacious secretions. The authors turned to the enzymes and wetting agents to find the solution.

Once the secretions are liquefied, the next important step is their removal. In atelectasis, these secretions are found not only in the major bronchi, but in the majority of instances, obstructing the smaller bronchi, bronchioles, and alveoli. Removal of the secretions from these areas in the lung is an important factor. In non-poliomyelitic patients, this is accomplished by inducing the patient to cough by whatever means is found necessary. Only by an adequate cough can these secretions be removed, no matter whether a tracheotomy is present or not. A catheter can reach only secretions in the trachea, mainstem bronchi, or even down to the tertiary bronchi, but no further. In the post-poliomyelitic patient, coughing becomes an extremely complex problem. Most severe poliomyelitic patients have no cough, or one which is completely ineffective. Thus, they must be coughed artificially.

All patients in this study had definite atelectasis by x-ray film and all reported as clear showed complete clearing by x-ray. The only enzyme used was aerosol "tryptar" and the only aerosol wetting agent used was "triton A-20," a 25% solution of "alevaire," which is an aqueous solution of a new detergent, "triton WR-1339," 0.125%, in combination with sodium bicarbonate 2% and glycerin 5%.

Three methods were used in administering "tryptar": (1) by direct instillation through a bronchoscope into the bronchus of the lobe or lung involved; (2) by aerosolization through a tracheotomy tube; and (3) by aerosolization with a conventional mask used for aerosol treatments.

Three methods of administering "triton A-20" were: (1) by tent, with a nebulized solution flowing into the tent which covered primarily the head and neck of the patient; (2) by mask; and (3) by tracheotomy tube.

Coughing is accomplished in various ways depending on the type of patient. In non-poliomyelitic patients, who cannot or will not cough voluntarily, tracheal catheterization is the best means of producing a cough in both tracheotomized and non-tracheotomized patients. In post-poliomyelitic patients, the coughing which is extremely important, must be done by artificial means. For patients with tracheotomies and in a respirator, a vacuum cleaner machine is attached to a porthole in the respirator and the pressure decreased to a negative 40 cm. of H_2O; this produces a deep inspiration. When this pressure is reached, the bedpan port is suddenly opened and a satisfactory expulsive force is produced through the open tracheotomy tube. A series of 24 coughs is given four times a day. The trachea is aspirated as necessary to clear the air passages of secretions. In post-poliomyelitic patients without tracheotomy tubes, the vacuum cleaner method cannot be used because synchronization of the action of opening the glottis with the sudden expulsive force is difficult or impossible in almost all patients. Therefore, "manual coughing" is used. With this method, the attendant compresses the thorax synchronous with the expiratory phase of the respirator. Although "manual coughing" is not as effective as vacuum coughing, it serves the purpose in the cases where it is used. These coughing procedures are used according to patient type regardless of whether "tryptar" or "triton A-20" is used.

Antibiotics are administered in all cases both by aerosol and parenterally as indicated. Aerosol antibiotics are not used in patients receiving "triton A-20" therapy because of the large amounts of solution necessary. All patients receive parenteral antibiotics during the course of treatment. Antibiotics are used according to sputum culture and sensitivity tests if feasible. (Camarata, S. J., Jacobs, H. J., Affeldt, J. E., The Use of Enzymes and Wetting Agents in the Treatment of Pulmonary Atelectasis: Dis. Chest, XXIX: 388-393, April 1956)

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Effect of Pregnancy on the Course of Heart Disease

The woman with heart disease who has entered or is planning pregnancy will ask a series of questions involving her immediate and remote prognosis. One of the questions involves her chance of surviving pregnancy. Many studies have been reported evaluating the mortality during pregnancy and the puerperium in women with heart disease. This mortality varies from 3% to less than 1% in patients under careful medical management throughout their pregnancies. As pointed out by Hamilton in his recent summary of cardiovascular problems in pregnancy, the immediate maternal mortality will be influenced by the severity of the heart disease at the time of pregnancy judged by a careful review of the patient's history with particular regard to the previous

occurrence of episodes of heart failure, the maternal age, the availability of good medical and obstetrical advice, and the cooperation of the patient in accepting this advice. It will also be affected by the policy of the patient's physicians toward the interruption of pregnancy, because if pregnancy is interrupted early in all patients with severe heart disease, the immediate maternal mortality might decline, possibly at the cost of an increased fetal mortality.

A second question to be expected from the woman with heart disease entering pregnancy is what chance she has of producing a living infant. The infant mortality when the mother has heart disease has been studied in several large clinics. Litzenberg in a recent review of the literature states that the mortality of infants born to patients classified functionally in class I and class II by the American Heart Association Classification will be the same as in patients with no heart disease, while those born of mothers in class III and IV, under the same classification, will have a 30% mortality.

Thus, these two questions can be answered in fairly definite terms. The woman with well compensated heart disease, who is class I or class II by the functional classification of the American Heart Association, has better than a 97% chance of surviving pregnancy and about as good a chance of producing a living baby as the woman without heart disease.

A third question that the pregnant woman with heart disease logically may be expected to ask is in regard to her prognosis for life and health once the immediate dangers of pregnancy are past. Few data are available to answer this question. For this reason, a follow-up study of those women with heart disease who were seen during pregnancy in the Boston Lying-In Hospital is being made. This is the first report on that study.

In 18 months, 91 cardiac patients were delivered and an additional 15 patients, delivered shortly before July 1950, were seen and evaluated at a postpartum visit to the medical clinic. This total of 106 patients included 92 with rheumatic heart disease, 8 with congenital heart disease, 1 with hypertensive cardiovascular disease, 1 with combined hypertensive and rheumatic heart disease, and 4 with "potential" rheumatic heart disease.

This group of 106 was selected only insofar as it comprised all the patients followed within a specified time interval in a metropolitan obstetrical hospital and referred to the hospital's medical clinic because of heart disease. The follow-up period of 3 to 5 years was selected because the changes since pregnancy could be evaluated by the same group of physicians that had supervised the therapeutic regimen during pregnancy.

The course of the 106 cardiac patients who were observed during this study was surprisingly good in regard to both survival and well-being. There were no maternal deaths during pregnancy or in the postpartum period in this group of 106 patients. Three to five years after their pregnancies, only 3 of the 106 patients were dead. Sixty-five patients (61%) were functionally unchanged according to the American Heart Association Classification, and

27 patients (26%) showed an improvement in their cardiac functional ability. In 5 of these, this improvement could be attributed to valvuloplasty and, in another, to resection for coarctation of the aorta. Only 14 patients (12%) showed progression of heart disease in terms of functional classification.

Because of the small number of patients with congenital heart disease in this study, no conclusions can be drawn as to the effect of pregnancy on congenital heart disease, and the comments apply to the 92 patients with rheumatic heart disease.

No patient died during pregnancy or the puerperium. Only three have died since; 92 patients have shown either no change or an improvement in functional classification.

This re-evaluation indicated that the altered circulatory dynamics of pregnancy may temporarily decrease functional capacity. However, no permanent change in degree of heart disease could be directly attributed to the pregnancy for which these patients were followed in 1950 and 1951. (Miller, M. M., Metcalfe, J., Effect of Pregnancy on the Course of Heart Disease. Reevaluation of 106 Cardiac Patients Three to Five Years after Pregnancy: Circulation, XIII: 481-488, April 1956)

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Palliation of Ovarian Carcinoma with Phosphoramide Drugs

Ovarian carcinoma ranks fifth as cause of death from cancer in women in the United States, although, as pointed out by Ackerman and del Regato, only 15% of all pelvic cancers are ovarian in origin. The insidious onset and course of this disease frequently delay diagnosis and therapy until distant metastases have occurred. Operation on ovarian tumors is often rendered difficult by extensive adhesions more or less fixed to the intestine, the bladder, and the pelvic wall. In spite of postoperative treatment with irradiation, the majority of these patients rapidly develop abdominal metastases which bring about death within a short time.

Various attempts to correct this serious situation have been made. The present article is a preliminary report concerning the observations on a group of patients who were treated with two related compounds, N-N'-N'' triethylene thiophosphoramide and N-3 (oxapentamethylene) N N' diethylene phosphoramide.

Twenty-two patients were included in this study. They ranged in age from 31 to 77 years with an average of 54 years. In all cases, diagnosis was made by histopathologic examination of material obtained by biopsy or resection of tumor.

Previous therapy included: in the group in which surgery alone was performed, biopsy only in 1 case, exploratory operation and biopsy in 4 cases, resection of tumor in 7 cases; in the group in which surgery was followed by

irradiation, exploratory operation in 1 case, resection of tumor in 7 cases; and 2 cases in which surgery was supplemented by both irradiation and hormone treatment.

Because pulmonary metastases were demonstrated by x-ray examination, 1 patient had biopsy of a neck node only; diagnosis was verified at postmortem examination. In 5 cases, surgery was limited to abdominal exploration and biopsy of a tumor nodule. Resection of disease was undertaken in 16 patients. Eight individuals had 2 or more operations for the disease. Both ovaries were involved by cancer in 8 cases.

Triethylene thiophosphoramide was prepared in a solution containing 10 mg. of drug per cc. of nonpyrogenic water. Sterilization was achieved by filtration and the solution was stored at 4° C. Patients were treated at intervals of 1 to 3 weeks except in a few instances when the drug was administered intravenously every day for 3 to 5 days after which the longer intervals were employed. The total amount of triethylene thiophosphoramide given ranged from 110 to 780 mg. (average 353 mg.) in periods of 1 to 22 months (average 7.6 months). Due to a temporary shortage of drug and in order not to interrupt therapy, oxapentamethylene diethylene phosphoramide was substituted for 1 to 3 doses of 10 to 70 mg. in 8 cases. Oxapentamethylene diethylene phosphoramide was prepared in the same way as triethylene thiophosphoramide with the exception that 20 mg. of drug were used per cc. of solution.

The initial dose of drug given by the intravenous route was 10 mg. for other routes, doses of 20 to 40 mg. were employed. Subsequent therapy depended on the white blood count which was obtained prior to each treatment. The dose was reduced when the white blood cells dropped below 5000 per cm., and therapy was usually discontinued temporarily in the presence of a leucopenia exceeding 3000 per cm.

Routes of therapy were: intravenous in 16 cases, intrapleural in 3, intraperitoneal in 3, intrapericardial in 1, into peripheral tumor masses in 7, transvaginal in 16, and transabdominal in 10 cases.

In all cases, an attempt was made to treat the site of disease which presented the greatest threat to the patient's welfare. The transvaginal and transabdominal approaches were used when a needle could be inserted directly into tumor masses in these areas. Only one site was treated at a time.

When pleural effusion or ascites occurred, a thoracentesis or paracentesis was performed and the drug was injected following the tap. One patient received one intrapericaridal injection of triethylene thiophosphoramide following a pericardial tap. Intravenous therapy was reserved usually for those occasions when no tumor sites could be reached with a needle. Route of therapy varied from time to time depending on the status of the patient.

Although this series of cases is small, all patients included had evidence of widespread ovarian carcinoma. Death usually occurs within 2 years in such patients when operation has been incomplete. Ten of the patients

treated with triethylene thiophosphoramide are alive 5 to 22 months following the institution of chemotherapy. Two were lost to follow-up. Of the 10 who have expired, 7 patients had some degree of palliation for periods of 1 to 7 months.

Triethylene thiophosphoramide is not difficult to administer even when given transvaginally or transabdominally. Treatment is easily given in the clinic or the office, and, because there are minimal clinical side effects, it is compatible with continuation of normal activities. Reasonable care is needed to avoid infection at the site of injection.

In the presence of extensive disease, treatment must be maintained at hematopoietic tolerance. Prophylactic antibiotic medication is not recommended in order to avoid the hazards of side effects and the development of drug resistant infection. However, when infection occurs, it should be treated promptly and adequately. Prolonged therapy with the phosphoramides appears to be associated with varying degrees of anemia in many cases. It is much more apt to occur with oxapentamethylene diethylene phosphoramide injections and may be severe following this drug. Because anemia is frequently associated with far advanced cancer, and because anemia does not always occur with phosphoramide therapy, it is assumed that other factors may be involved. Therapy with phosphoramide drugs appears to be palliative only and must be continued in order to achieve and maintain control of disease.

The observations reported appear to warrant further therapeutic trials with triethylene thiophosphoramide in ovarian carcinoma. (Bateman, J.C., Winship, T., Palliation of Ovarian Carcinoma with Phosphoramide Drugs: Surg. Gynec. & Obst., 102: 347-354, March 1956)

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Methods of Prevention and Control of Dental Caries

Approximately 90% of the teeth now lost before middle age could be saved in the future adult population of this country by the application of what is already known about the control and prevention of dental diseases. A major problem is to find the means and the will for applying what is known. The public health dentist can play a major role in the solution of that problem.

Teeth are lost for two principal reasons: (1) destruction of the crowns by caries, and (2) destruction of the attaching tissues by inflammation and degeneration. Although not all the intricate complications in the etiology of caries have been unraveled, sufficient understanding of the basic factors has been gained to place preventive treatment on a rational basis; and the possibility of controlling the progress of carious destruction through good operative dentistry at an early age is well established.

There are many predisposing conditions that may influence the carious process such as age, heredity, emotions, state of health, salivary flow and

composition, tooth structure, and position, but the actual destructive forces are few. Evidence continues to accumulate to support the generally accepted theory that bacterial activity is a major factor. The fact that cavities invariably occur where microorganisms can accumulate and remain relatively undisturbed for long periods of time, has provided circumstantial evidence that bacteria are associated with the destructive process. Direct evidence that bacteria are required for the production of caries is accumulating through the germfree animal studies conducted at the University of Notre Dame in collaboration with the Zoller Clinic of the University of Chicago.

The principal agent that destroys the calcified tissues of the teeth is probably acid in character. Many investigations have demonstrated the production of cavities in the enamel by weak acids. The only type of food taken into the mouth, which can develop an acidity of sufficient strength to dissolve enamel, is carbohydrate. The carbohydrates are converted to acid by enzymatic action. The simpler the carbohydrate, the more rapidly is it converted to acid. Thus, the simple sugars—glucose, fructose, sucrose—are more readily converted than are the polysaccharides (the starches). Many dietary studies have shown an association between refined carbohydrate consumption and caries activity. It is well known that the amount of caries any population experiences is roughly proportional to its sugar consumption.

When these observations are collated, that is, the association between bacteria, carbohydrates, the production of acids from bacterial action on carbohydrate and the requirement of acid for tooth destruction, it is obvious what the principal factors in tooth destruction are, and what steps can be taken to prevent or control this disease. A rationale based on the factors outlined for reducing carious activity could include the following:

1. Restriction of the amount of fermentable carbohydrate in the diet.
2. Production of a tooth tissue more resistant to acid and enzymatic action.
3. Removal of fermentable material from the surfaces of the teeth before it is converted into acid.
4. Employment of nontoxic antibacterial agents to eliminate the microorganisms associated with the decay process or to interfere noticeably with their metabolism.
5. Placement of inhibitors in the mouth that interfere with or destroy enzymes responsible for the conversion of carbohydrate to acid.
6. Neutralization of acids as rapidly as they are formed on the tooth surfaces.

The most effective means of preventing the initiation of carious lesions is a dietary program that sharply reduces the amount of sugar consumed.

Another effective means with sufficient evidence to support the claims for it is the use of fluorides either through water fluoridation or topical application of fluoride solutions. Any means for caries control that requires conscientious cooperation on the part of the individual, that denies him

something which he enjoys, or requires him to perform a ritual that is inconvenient, cannot be too effective in controlling caries in large numbers of people. But an agent that will give partial resistance and that can be provided without personal effort on the part of the individual is fluoridation of the drinking water. It should be an effective mass means of reducing caries.

For many years, the toothbrush has been advocated as a weapon against caries. Skepticism has developed about its effectiveness because of the increasing incidence of caries despite the increased sale and use of toothbrushes and dentifrices. The reasons for this inconsistency are that the toothbrush has not been used at the time of greatest effectiveness nor in the manner that cleanses the areas that are vulnerable to decay. Present knowledge indicates that the decalcifying phase of the carious process reaches its maximum activity within the first 20 to 30 minutes after eating; therefore, the popular habit of brushing teeth the first thing in the morning and the last thing at night is not rational for caries control. People should be taught to clean the mouth soon after eating.

Nothing new has been revealed in this brief review of caries etiology, prevention, and control. Its purpose is to reaffirm faith in what is known, and to accelerate more action in its application so that future generations will be served more by their own teeth and less by the artificial variety. (Kesel, R.G., Methods of Prevention and Control of Dental Caries: J. Am. Dent. A., 52: 455-462, April 1956)

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Comments on the Revised Dental Standards Relative to Entrance to U.S. Navy and Marine Corps Officer Candidate Training Programs

1. During recent weeks, it has become apparent that there is still some lack of understanding regarding the recent changes in dental requirements for entrance to the Naval Academy as promulgated by Advance Change 4-5 to the Manual of the Medical Department, Art. 15-25. The following comments are designed to clarify these revised standards, particularly for dental officers conducting screening or preliminary examinations.

2. The dental requirements for entrance to Navy and Marine Corps Officer Candidate Training Programs were changed, not with the intention of admitting man of lesser caliber to the Academy, but rather to extend the scope of opportunity to a greater number of young men considered to be naval officer material. In the past, it was felt that perhaps too stringent standards, or more precisely, a too stringent interpretation of those standards resulted in the failure of too many potentially fine candidates in gaining admittance to officer candidate schools.

3. The new standards and regulations have been published in clear, concise terminology. The examiner, while keeping the intent of the standards in mind, should evaluate the candidate from the standpoint of his potentialities as a future naval officer. In fact, in many cases, liberal interpretation of the strict letter of the standards may be more than compensated for by the potentialities of the individual under consideration. It is not intended that these requirements be hard and fast rules to keep people out. A liberal interpretation is desired within the bounds of common sense and professional judgment to get the right kind of candidate into the officer candidate school.

4. Some of the requirements are so specific that everyone will place the same interpretation upon them, but others are general enough to permit a divergence of opinion. Only the nonspecific requirements will be discussed.

a. Lack of Satisfactory Incisal Function. A minor failure to actually contact the anterior teeth in protrusive relationship is not intended as a cause for rejection. Thus, a man with a good set of teeth might be admitted as having satisfactory incisal function despite his inability to bring his anterior teeth into exact end to end contact.

b. Lack of Satisfactory Masticatory Function. Previous to now, molar occlusion on both sides of the arch was a necessary qualification for admittance. It seems reasonable to assume that satisfactory masticatory function would now mean either at least one sound molar in apposition on each side of each arch or a partial denture that will furnish bilateral molar occlusion. While a person can chew with only one intact side above and below, he will undoubtedly soon become a prosthetic problem if he has unopposed molars on the other side, hence the desire for molars in apposition on both sides. In other words, the setting of a minimum of sixteen teeth as a standard is not an indication that men can enter without posterior teeth for mastication. It has merely made more extensive partial dentures acceptable.

c. Carious Teeth Except Minor or Questionable Caries. The intent is still to insist that applicants have caries corrected prior to admittance to officer candidate training programs. Active duty enlisted personnel who are candidates should not be disqualified for caries, but appointments arranged for remedial treatment. The exception to "minor or questionable caries" was made simply to forestall an over-zealous examiner from excluding some worthy person because of an unrestored pit or fissure or nicks discernable by x-ray on interproximal surfaces. It is very desirable that there be no loose interpretation of the term "minor or questionable caries." An example of the need for no loose interpretation of minor caries is the following: In 1952, the Bureau made a concession regarding Naval Aviation Cadets. It was stated that "free from caries" could be interpreted as

"moderate or easily correctable caries." Shortly after that, two NavCads arrived at Pensacola with mouths so completely wrecked by caries that full mouth extractions had to be carried out. Many others arrived with rampant caries. The bars had been slightly lowered and the examiners dropped them completely. It should be remembered that officer candidates in training who have dental caries must sacrifice valuable training or study time to receive dental treatment.

d. Marked Malocclusion. In the past, malocclusion has been the object of variable interpretation. It is most significant that the Bureau of Medicine and Surgery presently relates malocclusion to facial deformity. This should rule out, as causes for rejection, many minor malocclusions such as cross-bite, over-jet, over-bite, impingement, et cetera, provided such malrelationships do not endanger the longevity of the teeth and disfigure the applicant.

e. Infectious or Chronic Diseases. Slight areas of infection or hyperemia susceptible to treatment or simple correction are not considered disqualifying. Cases for rejection include those persons with extensive loss of gingival or bony tissue. Those persons who may lose their teeth due to loss of supporting tissues are those most likely to become dental liabilities.

5. As one views the new dental standards, it becomes apparent that there has been a marked simplification designed to eliminate failure due to technicalities. The change permits more applicants to qualify, but does not significantly increase the dental workload. Four important changes stand out. First, more extensive partial dentures are now acceptable where sound natural teeth were previously required. Secondly, malocclusion has presently been related to facial deformity in an effort to rule out the myriad of malrelationships that previously have caused unnecessary rejections. Thirdly, it is significant that the word "vital" has been eliminated as a prerequisite for a sound tooth. Thus, a successfully treated non-vital tooth may be counted as one of the sixteen natural teeth presently required. Fourth, we now have one set of dental requirements for all types of officer candidates. (DentDiv, BuMed)

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From the Note Book

1. Mrs. Ivy B. Priest, Treasurer of the United States, presented to Rear Admiral O. B. Morrison, MC USN, Commanding Officer of the U.S. Naval Hospital, Portsmouth, Va., the Minute Man Flag, at a ceremony held at the hospital on April 11, 1956. This flag is the U S. Treasury's highest honor and award for excellence in participation in the United States Savings Bond Program.

The award, presented for the first time to any naval hospital, is official recognition by the Treasury Department and represents high standards of excellence for participation in the United States Savings Bond Pay Roll Program for the calendar year 1955. An average enrollment of over 90% for the year was maintained by employees of the hospital. (TIO, BuMed)

2. Rear Admiral I. L. V. Norman, MC USN, served as Alternate for the Surgeon General of the Navy on the Board of Governors at the Annual Meeting of the American College of Physicians, held in Los Angeles, April 15 - 21, 1956. (TIO, BuMed)

3. Rear Admiral W. P. Dana, MC USN, participated as a Bureau of Medicine and Surgery representative and as a member of the Executive Council at the Annual Meeting of the Aero Medical Association, held at Chicago, April 15 - 19, 1956. (TIO, BuMed)

4. Captain R. H. Fletcher, MC USN, represented the Bureau of Medicine and Surgery at the Health Congress of the Royal Society for the Promotion of Health, April 24 27, 1956, at Blackpool, London, England. (TIO, BuMed)

5. Captains C. L. Riggs and A. J. Cerny, MC USN, are attending as students the Twelfth Interagency Institute for Federal Hospital Administrators, held at the Walter Reed Army Medical Center, Washington, April 23 - May 11, 1956. (TIO, BuMed)

6. Letters were recently sent by the Dental Division, Bureau of Medicine and Surgery, congratulating Reserve Dental officers upon selection to the grade of Captain or Commander.

Promotion is perhaps the paramount motivating factor in the minds of active Reservists in their Reserve participation. Many letters have been received in the Bureau from these recent selectees in answer to those of the Division. Practically all expressed their appreciation for the selection and their intention of remaining active in the Reserve Program. These men, by their example, are the leaders in the Reserve Program; they have been active since 1945 and have provided the leadership necessary to maintain a strong Dental Reserve. (TIO, BuMed)

7. The U.S. Naval Hospital, Philadelphia, Pa., was co-host with the Philadelphia County Dental Society for the Seventh Annual Combined Meeting on 4 April 1956. Over 350 civilian dentists and physicians from a five-state area heard Dr. M. S. Aisenberg, Dean, School of Dentistry, University of Maryland, discuss: The Diagnosis of Oral Malignancies. (USNH, Philadelphia, Pa.)

8. Captain P. B. Phillips, MC USN, Head of the Department of Neuropsychiatry at the Naval School of Aviation Medicine, Pensacola, Fla., addressed the annual meeting of the Gulf Coast Industrial Council in Biloxi, Miss., April 6, on Dealing with the Personality Extremes. (SchAvMed, NAS, Pensacola)

9. An exhibit entitled Enrich Your Professional Career, Nurse Corps, USN was shown at the Washington State Nurses Convention in Spokane, Wash., April 18 - 20, 1956. The important phases of service in the Nurse Corps were illustrated in this exhibit. (TIO, BuMed)

10. Clinical histories, operative findings, and end-results of 16 patients who have undergone surgical removal of traumatic intracerebral hematomas are reviewed in Ann. Surg., March 1956; R. L. McLaurin, M. D., B. H. McBride, M. D.

11. A detailed statistical study of the prevalence of periodontal disease, based on dental examination of nearly 13,000 employees of the Metropolitan Life Insurance Company, has been made. The study includes the total prevalence of the condition, of the extractions for it, and facts on the proportion of the individual teeth affected or extracted. (J. A. D. A., April 1956; W. A. Bossert, D. D. S., H. H. Marks, A. B.)

12 The effects of arctic climate and different shelter temperatures on the ECG were investigated in 7 normal young men performing standard work outdoors in arctic and temperate climates. (Am. Heart J., March 1956; Captain L. A. Kuhn, MC USA)

13. Marjolin's ulcer may be briefly defined as a cancer arising in a burn scar. Three cases of Margolin's ulcer are presented in Surgery, April 1956; R. J. Schlosser, M. D., E. A. Kanar, M. D., H. N. Harkins, M. D.

14. The management of pulmonary embolism and pulmonary infarction is discussed in PostGraduate Medicine: March 1956; L. J. Boyd, M. D., E. J. Nightingale, M. D.

15. The value of a yearly physical survey in the adult female is discussed in J. A. M. A., 14 April 1956; R. N. Rutherford, M. D., A. L. Banks, M. D.

16. Four similar cases of fatal fat embolism are presented with emphasis on the clinical and pathological findings. The diagnosis of fat embolism is often missed because of the uncertain nature of the disease in its milder forms and because of a lack of awareness of the attending physician. (Arch. Surg., April 1956; Major T. G. Nelson MC USA, Colonel W. F. Bowers, MC USA)

Recent Research Projects*

Naval Medical Research Institute, NNMC, Bethesda, Md.

1. The Acetylcholinesterase Surface. V. Some New Competitive Inhibitors of Moderate Strength. NM 000 018.12.03, 9 November 1955.
2. The Interaction Between Acetylcholine and Atropine on the Isolated Frog Heart. NM 000 018.12.01, 14 November 1955.
3. Metabolic Studies of Intact Perfused Calf Adrenals Using Tetrazolium. NM 006 012.04.88, 15 November 1955.
4. Emergency Laboratory Organization for the Care of Large Numbers of Human Beings Accidentally Exposed to Ionizing Radiation. NM 006 012.04.91, 18 November 1955.
5. The Effect of Extreme Cold Exposure on Adrenocortical Function in the Unanesthetized Dog. NM 007 081.22.05, 1 December 1955.
6. Corresponding States in Multilayer Step Adsorption. NM 000 018.06.44, 2 December 1955.
7. Radiation Dosimetry in Biological Research. NM 006 012.04.92, 9 December 1955.
8. An Analysis of the Effects of Total Body X-Irradiation on the Body Weight of White Mice. II. Body Weight Changes of Male Mice as a Biological Dosimeter. NM 006 012.04.68, 9 December 1955.
9. Approximate Calculation of the Electrostatic Free Energy of Nucleic Acids and Other Cylindrical Macromolecules. NM 000 018.06.42, 9 December 1955.
10. A New Technique for the Study of Drug Actions on Bronchial Resistance in the Isolated Lung. NM 000 018.12.05, 12 December 1955.
11. The Effects of Aging and the Modifications of These Effects, on the Immunity of Mosquitoes to Malarial Infection. NM 005 048.06.08, 12 December 1955.
12. Conversion of Steriods to Aldosterone-like Material. NM 006 012.04.90, 13 December 1955.
13. Secondary Kidney Homotransplantation. NM 007 081.21.03, 13 December 1955.
14. A Technique to Minimize Color Changes in Ocular Prostheses. Memo. Report 55-7. NM 000 018.07, 19 December 1955.
15. The Freezing and Thawing of Whole Blood. NM 000 018.01.10, 19 December 1955.
16. Selection and Preliminary Adaptation of Rats for Work in the NMRI Multiple Choice Box. NM 000 019.01.03, 20 December 1955.
17. A Thirty-Day Cariogenic Diet for Osborne-Mendel Rats. NM 008 012.01.14, 22 December 1955.
18. Summaries of Research. 1 July - 31 December 1955.
19. Regulation of the Secretion of Aldosterone-like Material. NM 006 012.04.89, 18 January 1956.

Naval Medical Research Laboratory, Submarine Base, New London, Conn.

1. Exposure Test of Fluorescent Paints to Sun and Salt Water. Memo. Report 56-1. NM 002 014.09.05, 3 January 1956.
2. Evaluation of Three Waterless Handcleaners. Memo. Report 56-2. NM 002 015.14.03, 19 January 1956.
3. Field Evaluation of Modified Submarine Rescue and Escape Suits. Memo. Report 56-3. NM 002 013.01.03, 9 February 1956.
4. Photometric Survey of Lighting Installation on the Submersible Craft X-1 (SSX-1). Memo. Report 56-5. NM 002 014.08.12, 29 February 1956.

Naval School of Aviation Medicine, NAS, Pensacola, Fla.

1. The Acetylcholinesterase Surface. VI. Further Studies with Cyclic Isomers as Inhibitors and Substrates. NM 000 018.12.04, 6 December 1955.
2. A Study of Intelligibility and Selective Filtering with a Unidirectional Communications Net. Report No. 62. NM 001 104 500, 15 December 1955.

*(Continued from Volume 27, No. 8)

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Postgraduate Course Offered to Navy Medical Officers

Applications are desired from Regular Navy medical officers and Reserve officers who have recently reported to active duty for attendance at a course of instruction in Preventive Medicine, to be conducted at the Naval Medical School, National Naval Medical Center, Bethesda, Md., commencing 10 September 1956.

Purpose. This course is offered in order to better prepare medical officers for their service in the Navy. It will also serve to prepare eligible flight surgeons of the Navy and Air Force for examination by the American Board. The course is designed to assure knowledge of current principles and practices in preventive medicine at administrative and non-laboratory operational levels. Of primary concern are requirements of the military forces, their industrial activities and their essential relationships with civil communities.

Length of Course. The course covers 18 weeks of lectures, laboratory and field observations, seminars and individual studies. Approximately 520 class hours are scheduled with time held in reserve for study and augmentation of individual subjects as found necessary.

Instruction Personnel. Highly qualified staff personnel, augmented by visiting lecturers from academic institutions, the Public Health Service, and the other Armed Services.

The course content includes the following:

1. Introduction to Biostatistics
2. Epidemiology

3. Environmental Preventive Medicine
4. Health Practice - general
5. Health Practice - specialized fields

Requests from interested and eligible personnel should be submitted via official channels to the Chief of the Bureau of Medicine and Surgery. Attendance will be on a temporary duty under instruction basis with travel and per diem provided. Enrollment is limited to 12 officers of the Navy plus 12 officers of the U.S. Air Force. Deadline for receipt of applications is 1 August 1956. Reliefs cannot be provided for those approved for attendance. Minimum security clearance classification of Secret is required for attendance. (ProfDiv, BuMed)

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BUMED INSTRUCTION 6200.2A 20 March 1956

From: Chief, Bureau of Medicine and Surgery
To: Stations Having Medical/Dental Personnel Regularly Assigned

Subj: Liaison with Public Health Service

Encl: (1) Joint Army Navy-Air Force directive re subject

This instruction, through enclosure (1), incorporates into the Navy Directives System a revised joint Army-Navy-Air Force directive on liaison with the Public Health Service. BuMed Instruction 6200.2 is canceled.

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BUMED NOTICE 6230 3 April 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Poliomyelitis vaccine

Ref: (a) BuMedInst 6230.8 of 16 Sep 1955, Subj: Poliomyelitis; immunization of dependents against
(b) BuMedInst 6230.8 Sup-1 of 16 Dec 1955, Subj: Poliomyelitis vaccine, Salk; distribution and use of in the continental United States
(c) U.S. Navy Medical News Letter, Vol. 27, No. 3 pp. 35 - 37, 3 Feb 1956
(d) U.S. Navy Medical News Letter, Vol. 27, No. 5, pp. 32 - 34, 2 Mar 1956

This notice promulgates information on current status of procurement and distribution of poliomyelitis vaccine for immunization of dependents of Navy and Marine Corps personnel.

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BUMED NOTICE 5213 6 April 1956

From: Chief, Bureau of Medicine and Surgery
To: Activities Under Management Control of BuMed

Subj: Recurring reports; review of

Ref: (a) BuMedInst 5210.4 of 9 Sep 1955 (Notal), Subj: Hospital forms, reports, and records disposal programs

Encl: (1) Guide for Conducting Review of Reports
(2) Flyer "Improve Your Reports"
(3) Format for submitting recurring reports recommendations
(4) Format for indicating results of review

This notice directs an intensive review of all recurring reports and sets forth procedures for carrying out this review.

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BUMED NOTICE 1080 6 April 1956

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical/Dental Personnel Regularly Assigned

Subj: NavMed-HC-3 Card; modification in submission of

Ref: (a) Subarticle 23-6(3)(d)(10), ManMed

This notice advises addressees of modification in the submission of the Nav-Med-HC-3 card.

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BUMED INSTRUCTION 6510.5A 9 April 1956

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical/Dental Personnel Regularly Assigned

Subj: Histopathology centers; designation of

Ref: (a) BuMedInst 6510.2A, Subj: Armed Forces Institute of Pathology and Histopathology Centers; central facilities provided for Department of Defense by

This instruction provides a revised list of activities designated or redesignated as histopathology centers by the Director, Armed Forces Institute of Pathology in conformance with Section II, paragraph 4 of reference (a). BuMed Instruction 6510.5 is canceled.

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BUMED INSTRUCTION 6320.9C 17 April 1956

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Personnel Regularly Assigned

Subj: Outpatient Report, DD Form 444 (Report Symbol Med-6320-5)

This instruction revises instructions for the preparation and submission of subject report in its new format and content prescribed by the Department of Defense. BuMed Instruction 6320.9B is canceled.

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BUMED NOTICE 6320 19 April 1956

From: Chief, Bureau of Medicine and Surgery
To: Naval Hospitals and Activities Having Station Hospitals or Dispensaries with Authorized Beds.

Subj: CH-1 to BuMed Instruction 6320.19A, Subj: Report of Treatment Furnished Pay Patients, Hospitalization Furnished (Part A), DD Form 7; reporting requirement for

Encl: (1) Revised enclosure (1) for subject Instruction

This notice reflects current billing procedures of the Bureau which require separate DD Form 7 reporting for additional components of supernumerary pay patients.

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DENTAL SECTION

Selection for Residency or Advanced Training - Fiscal Year 1957

The Dental Officer Training Committee, Dental Division, Bureau of Medicine and Surgery, on 2 March 1956, selected the following Naval Dental officers for residency or advanced training during the fiscal year 1957:

Residency Training in Oral Surgery

(First Year Level)
Captain Raymond J. Graves DC USN, Naval Hospital, Chelsea, Mass.
CDR John L. Keener DC USN, Naval Hospital, Portsmouth, Va.
LCDR William J. Kennedy DC USN, Naval Hospital, Philadelphia, Pa.
LCDR Robert S. Neskow DC USN, Naval Hospital, St. Albans, N. Y.

(Second Year Level)
Capt. Paul O. Lang DC USN, Naval Dental School, Bethesda, Md.
CDR David V. Castner DC USN, Naval Hospital, San Diego, Calif.
CDR Jackson F McKinney DC USN, Naval Hospital, Oakland, Calif.
LCDR Guy R. Courage DC USN, Naval Hospital, Great Lakes, Ill.

Advanced Prosthodontic Training

CDR Elwood R. Bernhausan DC USN, Naval Dental Clinic, Norfolk, Va.
CDR Don L. Maxfield DC USN, Naval Station, T.I., San Francisco, Calif.
CDR Christopher E. Thomlinson DC USN, Naval Dental School, Bethesda, Md.
LCDR Frank J. Kratochvil DC USN, Naval Dental School, Bethesda, Md.
LCDR Ben C. Sharp DC USN, Naval Station, T.I., San Francisco, Calif.
LT Fred N. Amman DC USN, Naval Dental Clinic, Norfolk, Va.
LT Irving J. Weber, Jr., DC USN, Naval Dental Clinic, Brooklyn, N. Y.
LT Andrew (n) Wyda DC USN, Naval Dental Clinic, Brooklyn, N. Y.

Advanced Periodontic Training

(First Year Level)
LCDR Peter F. Fedi DC USN, Naval Station, T.I., San Francisco, Calif.
(Second Year Level)
CDR Dwight W. Newman DC USN, Naval Dental School, Bethesda, Md.

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Remnants and Records

The value of accurate dental records as a means of identification was highlighted again recently in the Bureau of Medicine and Surgery. The remains of a mandible and fragments of a maxilla with five teeth, received from an overseas base, were identified beyond question as belonging to one of six individuals whose names were listed as plane crash victims. Accurate recording of restorations in 1948 by Captain Leo E. Brenning, DC USN, on a Nav-Med H-4 and a remark stating "diastema #7, 8, 9, 10, 11, 26, 27 areas," made in 1953 by Captain Frank D. Dobyns, DC USN, on a SF 603, were the contributing factors which made the identification possible. Accurate and detailed dental records such as these are a gratification to those who are called upon to identify an unknown when other evidence is either missing or meager.

Captain Leo E. Brenning, DC USN, is presently on duty at the U.S. Naval Air Station, Norfolk, Va., and Captain Dobyns is presently assigned to the USS Tutuila (ARG-4).

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Dental Activities Within the Naval Service

According to a recent study in the Dental Division, there are now 434 Naval Dental activities. One hundred and eighty-seven of these activities are located in naval districts; 247 are in Atlantic and Pacific Fleet Commands. In addition to these, 10 mobile dental units supply dental care to isolated naval activities.

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Members of American Society of Oral Surgeons

The files of the Dental Division, Bureau of Medicine and Surgery, indicate that the following Naval Dental officers are members of the American Society of Oral Surgeons:

Rear Admiral Ralph W. Taylor
Captain Gerald H. Bonnette
Captain Donald E. Cooksey
Captain Walter W. Crowe
Captain Roger G. Gerry
Captain Harold G. Green
Captain Raymond F. Huebsch
Captain Harvey S. Johnson
Captain William B. Johnson
Captain Charles J. Schorck
Captain Arthur S. Turville
Captain Wilbur N. Van Zile
Commander Edward A. Garguilo
Commander Jerome C. Stoopack

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Dental Service at USNH, Memphis Approved by ADA

Dr. Gerald B. Casey, Secretary, Council on Hospital Dental Service, American Dental Association, has informed the Commanding Officer, U.S. Naval Hospital, Memphis, Tenn., that its Dental Service has been approved by the Council. Captain Cline O. Williams, DC USN, is the Chief of Dental Service.

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Correction of Catalog Number - Naval Dental Film

The catalog number of the Naval Dental Corps film, "Aseptic Procedures in Oral Surgery," listed on page 28 of the 2 March issue of the Medical News Letter, is erroneous. The correct number is NM-7930.

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Revised Dental Standards

Attention is called to the article entitled, "Comments on the Revised Dental Standards Relative to Entrance to U.S. Navy and Marine Corps Officer Candidate Training Programs," appearing on page 18 of this issue of the News Letter.

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The printing of this publication has been approved by the Director of the Bureau of the Budget, 16 May 1955.

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MEDICAL RESERVE SECTION

Meeting of Military Medicine Section - American Medical Association

The Military Medicine Section of the American Medical Association's Annual Scientific Program will meet, June 12 - 14, 1956, at the Cinema Theater Auditorium, 151 East Chicago Avenue, Chicago, Ill.

In announcing the meeting, Captain Cecil L. Andrews, MC USN, Secretary of the Military Medicine Section, stated that this year's important and extremely valuable program will include papers by leading military and civilian physicians and scientists from all parts of the nation. Captain Andrews is Director of the Professional Division in the Navy's Bureau of Medicine and Surgery.

Reserve Medical officers (Inactive) of the Navy, Army, and Air Force, who register their presence, will receive retirement point credits for attendance at the Military Medicine Section of the meeting. Eligible medical officers are urged to take advantage of this opportunity. One point will be awarded for each day attended.

Rear Admiral H. Lamont Pugh, MC USN, Chairman of the Military Medicine Section, will present the opening address at 9:00 a.m., Tuesday, June 12, 1956.

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Check Your Promotion Points - Fiscal Year Deadline is Approaching

If you are a Reserve officer in a promotion zone for fiscal year 1957, bear in mind that you mut have earned, by 1 July 1956, one-half of the number of promotion points required for professional qualification after selection.

Officers who do not meet this requirement will not be considered for selection. In other words, if you need 96 points to qualify professionally for promotion, you must have earned at least 48 of these points before 1 July. This requirement is in addition to that of earning at least 12 retirement points during fiscal year 1956.

Further information on the promotion of Naval Reserve officers may be found in the September 1955 issue of The Naval Reservist.

The number of promotion points required by all officers in fiscal year 1957 promotion zones are shown below:

Present Rank - Date of*	Points Required to be Considered	Points Required to Qualify Professionally
1 July 1950 or earlier	72	144
2 July 1950 to 1 July 1951	72	144
2 July 1951 to 1 July 1952'	60	120
2 July 1952 to 1 July 1953	48	96
2 July 1953 to 1 July 1954	36	72
2 July 1954 to 1 July 1955	24	48
2 July 1955 to 1 July 1956	12	24
2 July 1956 to 1 July 1957	0	0

* Or date of acceptance of original appointment in the Naval Reserve if after date of present rank. (The Naval Reservist, March 1956)

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PREVENTIVE MEDICINE SECTION

Poliomyelitis Vaccine

(This is the fourth in a series of articles on the current status of the distribution of poliomyelitis vaccine for use in dependents of Navy and Marine Corps personnel.)

Questions reaching the Bureau of Medicine and Surgery in recent weeks indicate that many medical officers are having problems in relation to the dosage schedule for poliomyelitis vaccine. Some of the questions and answers follow:

Q. If the second dose cannot be given within 4 weeks following the first dose, does the course have to be started over?

A. No. There is no limit to the interval that can elapse between first and second doses. Two to four weeks is the minimum interval rather than

the maximum and the closer the second dose to the "poliomyelitis season" the better. If 7 or more months have elapsed, the second dose will probably provide the "booster" response now sought with a third dose.

Q. Is not the second dose necessary to provide protection against polio?

A. No. The majority of the antibodies that are found after two doses have been given within a 4-week interval, were stimulated by the first dose. The second dose does add to the antibody response and presumably increases the protection. As noted in the Preventive Medicine Section of the 9 December 1955 issue of the Medical News Letter, the Poliomyelitis Surveillance Unit has reported that one dose afforded significant protection during the summer of 1955.

Q. Will children vaccinated during the summer or fall of 1955 need the third dose this spring or summer to be protected?

A. This cannot be answered unequivocally. There is no question that another injection given 7 months or more after the first dose elicits the "booster" antibody response which is much greater than that following the first two injections, and that it is desirable for maximum protection. It is thought, however, that children vaccinated in 1955 will have some protection left, either from residual antibody levels or from ability to respond to infection anamnestically. Because of the shortage of vaccine, third doses or "boosters" are not planned until a majority of other children have had the first two doses.

Since the last article on this subject appeared in the Preventive Medicine Section of the April 6 issue of the Medical News Letter, additional allocations of poliomyelitis vaccine have been received and distributed to the field. The total now distributed within the continental United States is 113,583 cubic centimeters. If used only to give a first dose to eligible dependents, as recommended, this amount would meet first dose requirements for about 60% of dependents according to the figures submitted in January. As of this writing, the new requirements, which were to have been submitted on 30 March, have not been received from all naval districts, but, to the extent that they have been received, they do not appear to have changed to any significant degree from the earlier submitted requirements.

The Weekly Report of Morbidity and Mortality from the National Office of Vital Statistics, Department of Health, Education, and Welfare for April 6, 1956, summarizes the incidence of poliomyelitis for the first 3 months of 1956. The total incidence for the first quarter of 1956 is about the same as for the corresponding period of 1955, although the percentage reported as having paralytic poliomyelitis is greater. A greater incidence in 1956 is reported from the following States and Territories: Maine, Massachusetts, Wisconsin, Missouri, Louisiana, Texas, Arizona, California, and Hawaii.

This distribution does not lend any support to arguments that naval activities in some continental areas should receive priority in distribution of vaccine because of greater risk. Also, the Public Health Service has recently rejected suggestions that priorities be given to States in the southern United States because of the earlier onset of epidemics and greater incidence than in northern States. In the past, it has proven virtually impossible to predict areas that may have severe epidemics during any one summer; an area that is hard hit one summer is often spared the next year. In the distribution of the Navy's share of the vaccine, every effort is being made to provide enough vaccine for the first dose to eligible dependents in all areas prior to the summer months in the belief that the first dose will provide a significant degree of protection. Then, as quickly as supplies will permit, vaccine for second doses will be distributed. Requests for special allocations are being considered only when made from an area in which epidemic conditions already have occurred.

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Swimming Pool Sanitation

The responsibility for vigilance over the aspects of the operation of swimming pools and over the maintenance and laboratory practices, which pertain to health protection, is delegated to the Medical Department. To carry out this responsibility, medical officers concerned should familiarize themselves with current directives pertaining to swimming pool sanitation.

In many areas, outdoor swimming pools will be opened in the near future, and it is obvious that in combating disease transmission pools must be operated in a sanitary manner. To insure this, the following precautions are of essential importance:

1. Prior to entering the pool, all bathers should take a cleansing shower in the nude, using soap liberally and paying particular attention to the cleansing of body orifices.
2. Individuals with evidence of infectious or communicable diseases should be forbidden the use of the pool.
3. Chlorine test of water in the pool should be made at least twice daily. During periods of heavy bathing load the chlorine tests should be made at least once an hour. The results of the tests should be recorded in the log. The log should indicate whether the residual of chlorine is free or available.
4. Contaminating the pool, runways, and dressing rooms by spitting, or in any other way, should be strictly prohibited.
5. Consumption of food in the pool area proper should be forbidden.
6. Regardless of the type or capacity of a pool, the water should always be clear—free from scum and slime mold.

7. Domesticated pets should not be allowed in the pool area.
8. All safety devices should be maintained in good working condition and stored in their proper places.
9. Pool regulations should be posted in conspicuous places and all bathers should be encouraged to read them.

Swimming pools may be considered a combination of public toilet, dressing room, and bathroom. Many individuals using swimming pools are careless and irresponsible. Therefore, it is the duty of every operator to ascertain that facilities are maintained in good sanitary condition. When the health of personnel is involved, only the highest standards of sanitation are to be tolerated.

Distribution of a chapter of the Manual of Naval Preventive Medicine concerning swimming pools and bathing places is in prospect for the near future. Meanwhile, the Manual of Naval Hygiene and Sanitation (NavMed P-126) and Special Services (Welfare and Recreation) Facilities (NavDocks TP-Pw-13) are the authorized references for swimming pool sanitation.

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Report on the Sanitation Aspects of the Operation - "Passage to Freedom"

Contained herein are excerpts from a report by a member of the Medical Unit designated as Task Unit Number 90.8.6 of the sanitation aspects of the operation, "Passage to Freedom"—the evacuation of Vietnamese refugees from the Haiphong area of French Indochina. Commander (now Captain) Julius M. Amberson, MC USN, established the Unit as officer-in-charge and was later relieved by Commander (now Captain) Sidney A. Britten, MC USN.

The officers of CTU 90.8.6 moved into a hotel in Haiphong from the USS Estes on August 25, 1954. The enlisted men of the Unit were transferred to the USS Knudson for billeting on the same date. As the materials ordered by dispatch by the Unit had not arrived, the first 2 weeks were devoted to the development of liaison with the French and Viet-Nam authorities and to the study of the various phases of the refugee problem—from the arrival of the refugees in the Haiphong area through their embarkation aboard French LSM's to their ultimate transfer aboard the vessels of the U.S Navy in Bai D'Along.

Up to this time, no organized camps had been established, although a tent camp (Camp Shell) was being constructed to house 2000 refugees, and another (Camp de la Pagode) was being planned to house 7000. Neither site met the usual campsite requirements because of the high water level which frequently caused the inundation of large areas of the camps. No other ground was available, however, because all desirable space had been preempted for military camps. Latrines with slabs of the ASSAM type were constructed,

but, because of the high ground-water level, the latrine pits were usually about two-thirds full of water. Because of the inconvenient location of the latrines and a lack of sanitation discipline, the indiscriminate deposition of feces and other wastes continued to be the rule, rather than the exception. This posed quite a problem for CTU 90.8.6 because the Unit served merely in an advisory capacity and had no jurisdiction in the camps. At length, after considerable consultation with both the French and Viet-Nam authorities, CTU 90.8.6 prevailed upon them to employ individuals in the camps whose sole function would be to maintain satisfactory sanitation. When Camp de la Pagode was completed and opened, a Viet-Nam police group was installed. The concerted effort of the police group and the Senegalese military guards, in which both educational and police tactics were employed, brought about a semblance of sanitation. However, it fell considerably short of Navy sanitation standards.

The sanitation was less than basic in the other refugee areas which utilized church, school, and park properties in Haiphong. The latrines available were too few and the refugees seemed to prefer the slabs of the latrines, the walks, and, occasionally, the grass. School buildings housing refugees were excessively crowded with whole families living in the corridors, under and on top of piles of school desks, on the stair landings, and in other available spots. The preparation of meals over wood fires, built either on the tile of the passageways or in the yards, presented a tremendous fire hazard because the buildings were of wood, or wood and stucco construction.

Before the construction of the two camps, a "shanty town" existed about 15 kilometers to the northwest on the road to Hanoi. At this point, the refugees were deposited by trains. No provisions had been made for their reception. The people improvised shelters from any material available—rice mats, cardboard, plastic raincoats, et cetera. The conditions in this area were beyond description. Potable water and food were nonexistent and no toilet facilities were available. Under the torrid sun, heavy odors pervaded the still air when the Unit visited the area, and tremendous numbers of flies swarmed over the refugees and their possessions. The children were emaciated, hot, and dirty. The interpreter, Lieutenant D.R. Davis, MC USN, was informed by a French-Canadian priest that he had brought this group of 2500 and also two other groups on earlier occasions into Haiphong to escape the Viet-Minh. The group had had neither food nor water for 15 hours. Before the Unit left this site, a convoy of trucks arrived and the refugees were moved to more permanent campsites. On the recommendation of CTU 90.8.6, the authorities discontinued this site and had it isolated with barbed wire installations.

The first of the Unit's equipment arrived after 2 weeks and two power dusting machines were set up immediately for delousing with DDT powder. By utilizing its four enlisted men and others from the surgical teams, the Unit worked in one or two lines as the need arose. At this time, the Navy was evacuating daily from 2000 to 4000 refugees each of whom with his meager

belongings received a thorough dusting. The Unit's operation replaced the laborious process of dusting with hand dusters formerly used regularly aboard ship. The author supervised and assisted in the dusting, and Doctors Amberson and Davis closely scrutinized each refugee, on the alert for signs of contagious diseases which might imperil the health of the crews of naval vessels.

The Unit encountered a Viet-Nam interpreter who had made the trip to Saigon with one load of refugees. His story of the fine treatment accorded the refugees aboard the naval vessel by the officers and men was so enthralling that CTU 90.8.6 contacted officials of the United States Information Service and suggested that this story be given widespread publicity to counter the heavy propaganda of the Viet-Minh. The story was published in the Viet-Nam papers, and the U.S. Information Service printed it in leaflets and posters and dispersed them to the back areas. The leaflets were used also to wrap the small loaf of hard bread with a filling of meat and cheese that was given to each refugee at embarkation by the Viet-Nam social agencies.

After the first day's dusting operation, the Unit encountered little resistance to the dusting process due to the fact that the camp authorities had informed the people, at the Unit's request, as to what they could expect and why. The embarkation schedule frequently called for embarkation of military personnel and their dependents at other points. To these points, a machine and its crew of corpsmen were dispatched for the dusting operation; occasionally, dusting operations proceeded at three widely separated points simultaneously. Eventually, with the departure of the surgical teams, it was necessary to request enlisted men of the vessels in port for utilization in the dusting under the supervision of a corpsman. With a little careful supervision, these men fitted very well into the operation.

Approximately 3 weeks after the arrival of the Unit in the Haiphong area, field water purification units arrived. A water purification plant was set up in the newly established Camp de la Pagode in a relatively clean pond. However, the refugees' complaints about the taste of the water led the camp director to move the plant to an excessively muddy pond used for washing clothes, food, and the body. Guards were posted to prevent contamination as much as possible, but the water drained off the rice paddies which the people used as latrines. Nevertheless, the refugees all agreed that the water from the second pond tasted better. The production by CTU 90.8.6 of about 3000 gallons of potable water per day was obviously appreciated by the refugees.

Frequently, during periods of heavy rainfalls and high tides, the water point and about two-thirds of the camp became inundated with as much as 12 inches of water. This problem interfered considerably with the operation. With the aid of some silver nitrate, the Unit determined that with each inundation the high tides brought in salt water which neutralized the treatment chemicals, thus rendering ineffectual the Unit's efforts to produce a clean potable water. Inasmuch as considerable effort and thought had been expended in the

production of potable water, it was somewhat of a relief to find that the sudden foul-up was due to no error in the operation.

The French had placed several hand-operated, so-called purification units in the camps. These units, when operated properly, were capable of turning out a fair sample of water. However, they were operated in such a manner that merely the lumps were taken out of the water.

The Haiphong water plant was run by an industrial concern on a contractual basis. Chlorination was the responsibility of the municipal authorities. For water distribution the municipal system was divided into four general sections, each of which received water only 5 hours per day. The contractor was responsible for the maintenance of the plant and the municipal lines. The plumbing and connections for the consumer were the responsibility of the consumer. As a result, each establishment had its own system of well or cistern tied into the municipal supply. Consequently, innumerable cross connections existed in every installation causing considerable contamination of the city systems. Water was never served with a meal; red wine was served in its place. The medical party carried canteens, and water was replenished from the United States ships in the area.

The sewage system of Haiphong amounted to a system in name only. Some of the properties had cesspools and septic tanks, others had the bucket collection system, and some, judging from the odors and flies, had no toilet facilities. No sewage treatment plant was operated by the city. The sewage which inadvertently found its way into the system was dumped raw directly into the river. Indiscriminate defecation was practiced in the city too, and trash and garbage piled upon the sidewalks was a common sight because collections were irregular. During periods of excessively heavy rainfall, all the main streets became flooded, and sewage flowed out of those yards having cesspools or septic tanks. The streets were a long time draining because the sewer lines were inadequate and the average height of the city was only 10 feet above sea level.

On September 15, Lieutenant J.G. L.R. Kaufman, MSC, with Fleet Epidemic Disease Control Unit Number 2 personnel and their equipment, arrived and all were installed at the French Naval Base in a room donated by Admiral Carville of the French Navy. Working through his "Chef de Medicin," the Admiral supplied the Unit with laboratory space, furniture, and even a refrigerator. Without the Admiral's assistance, CTU 90.8.6 would have been unable to satisfactorily perform the laboratory phase of the mission. Collection of water samples from all United States ships in the area was begun. Colorimetric test kits revealed that the chlorine content of all water of the vessels was far too low for safety. Accordingly, the personnel of the Unit instructed the ships in proper chlorination techniques. A requirement of 1 ppm. of available chlorine was established for a minimum of 6 hours contact time before a tank was cut into the potable water systems. Colorimeter test kits and 70% calcium hypochlorite were furnished by CTU 90.8.6 to those vessels lacking the materials.

Stool samples and blood specimens were collected from the refugees, taken to the laboratory, and processed. Light traps for the collection of insects were placed at different locations on the Franch Naval Base and also aboard several ships in the area. The insects were sorted and classified as accurately as possible with the available insect identification keys. Snap traps and wire traps for live rodents were set; the Norway rat was the only species captured. During the rodent study, an interesting discovery was made: of all the rats captured, combed, and dissected, none had any evidence of external or internal parasitic infestation (louse, mite, or flea). Through the liaison previously established with the French Military Medical Personnel, blood smears were collected from known malarial patients.

Stool samples were collected and processed from each American in the area who became afflicted with the "Indochina Trots," a particularly debilitating form of diarrhea. Concurrently, the medical officers attached to CTU 90.8.6 also provided medical services for the ships in the area. The few cases requiring more adequate facilities were evacuated by helicopter to the larger ships anchored in Bai D'Along.

Dr. Davis performed exceptionally fine work in establishing liaison with the French and Viet-Nam authorities and did much to advance the prestige of the Unit through his sincerity, personality, and command of the French language. On September 15, Lieutenant J.G. T.A. Dooley, MC USNR, arrived to relieve Dr. Davis, who returned to the USS Estes for further transfer back to the U.S Naval Hospital, Yokosuka. Dr. Dooley was fluent in French and eventually became very fluent in Vietnamese; consequently, he was dexterous in dealing with the Vietnamese refugees. He was one of the last to be evacuated when the area was taken over by the Viet-Minh. The enlisted men attached to CTU 90.8.6 performed their duties in a most creditable manner, demonstrating initiative, enthusiasm, and sedulity in all tasks assigned to them. Although living and working conditions were never pleasant, the men frequently worked far into the night of their own volition.

Captain Britten arrived at Haiphong on September 26 and assumed position as officer in charge of the Unit. The author departed on October 11 by air for his permanent duty station on the Staff of Commander, Naval Forces Far East at the completion of 2 months TAD on Operation "Passage to Freedom."

(LCDR E.H. Gleason, MSC USN, PrevMedDiv, BuMed)

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Pre-employment Examinations of the Low Back

Roentgen-ray findings in 6523 pre-employment low back examinations revealed: congenital anomalies in lumbosacral region, 41.1%; normal spines, 39.93%; wear and tear changes in the lumbosacral joint; 6.3%; postural Scoliosis, 5.0%; advanced spinal arthritis, 3.3%; structural scoliosis, 1.9%;

increased lumbar lordosis, 1.3%; old compression fracture of vertebrae, 0.7%.

The most frequent congenital defects were malformed lumbosacral articulating facets, spina bifida occulta of the first sacral segment and supernumerary lumbar vertebrae. Most of these people were unaware of any back weakness.

The incidence of patients seeking treatment for low back pain or disability was much higher in those showing congenital anomalies in comparison to those having negative x-ray findings.

There is a real need for further criteria to use as a guide to employment and a basis of job placement. (LTS M. Walser, B.J. Duffy Jr., H.W. Griffith, MC USNR: J.A.M.A., 160: 856-858, 10 March 1956)

NOTE: The above abstract once again points up the importance of examinations of the low back. In performing pre-employment examinations of the low back, Navy occupational medical doctors should obtain detailed histories, make roentgen ray examinations and thorough physical examinations (to include inspection, palpation, and notation of any limitation of motion) and perform any other tests that may be needed for diagnostic purposes. Where this procedure is not practical on a routine basis, it should be mandatory at least in filling those jobs which call for heavy lifting.

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